

CLARK COUNTY, KENTUCKY

Clark County is part of the Lexington-Fayette County, Kentucky Metropolitan Statistical Area (MSA) and is on the I-64 east-west interstate corridor. It is located southwest of Montgomery County, northwest of Powell County, north-northwest of Estill County, north of Madison County, east of Fayette County, and south of Bourbon County.

EPA's June 29, 2004 proposal on appropriate designations for Kentucky included Clark County as nonattainment based on the following criteria:

- EPA indicates that Clark County has significant SO_x, NO_x, and PM emissions that potentially contribute to the violating MSA monitor. EPA noted that 10,000 tpy of any pollutant defines significant - Clark County does not have 10,000 tpy of a single pollutant.

Emissions Data

In Kentucky's original February recommendations, 1999 NEI data was used in the original analysis.

However, in EPA's June 29, 2004 letters to states, EPA looked outside the original MSA boundaries to determine if large emissions contributions from adjacent areas were having an impact on PM_{2.5} levels within the MSA. EPA also used the 2001 NEI which provided slightly newer data than had been recommended that states use.

Clark County emits only 14% of SO_x emissions from the counties recommended by EPA as having the potential to impact the violating monitors. A similar comparison can be made with both NO_x and PM. Clark County's NO_x emissions rank at 14% of the total EPA recommended areas, and PM at 13%. In a detailed review of EPA's recommended areas to be designated nonattainment, Clark County ranks consistently less than or equal to 15% of combined emissions contributions within EPA's June 29, 2004, proposed nonattainment boundaries. See Figures 1-4 below.

Figure 1

**Lexington Area SOx Emissions in EPA Proposed
Nonattainment Counties**

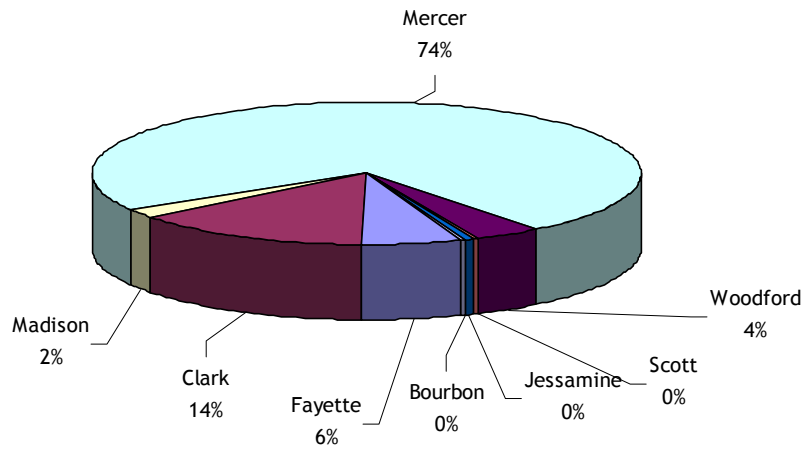


Figure 2

Lexington Area 2001 NOx Emissions

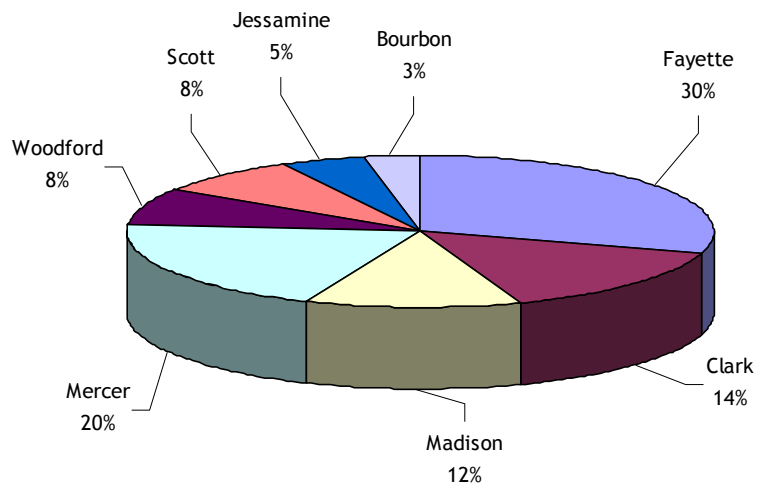


Figure 3

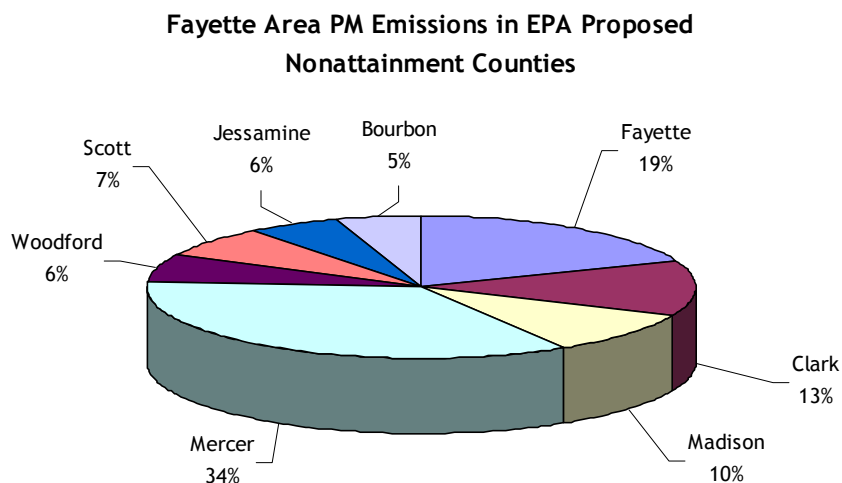
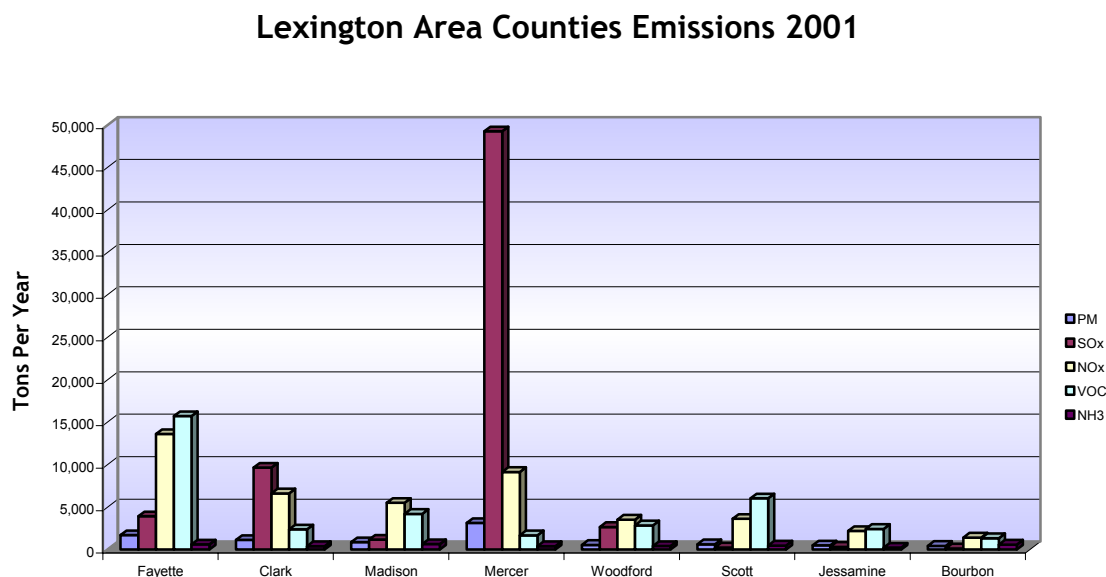


Figure 4

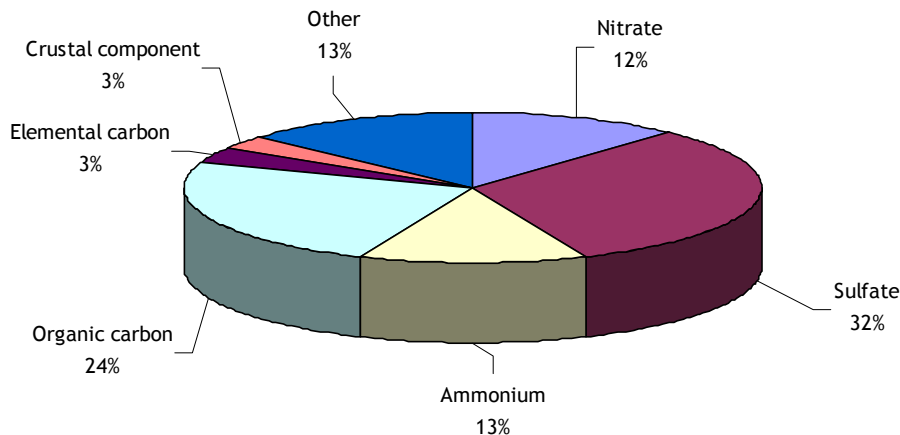


Monitoring Data and Trends

As can be seen in Figure 5 below, the speciation data from Kentucky's Lexington speciation monitor indicates that sulfate is the major component of the PM_{2.5} values. In Figure 1 above, Clark County, Kentucky, contributes only 14% of the SOx in the area of proposed nonattainment counties by EPA.

Figure 5

**Lexington Speciation Monitoring Data 2001-2003
Average Concentration ($\mu\text{g}/\text{m}^3$)**



The MSA has three monitors located within its boundaries, two in Fayette County and one in Madison County. $\text{PM}_{2.5}$ monitoring levels have continued to decline at all three monitors within this region. (See Figure 6 below)

Fayette County has two $\text{PM}_{2.5}$ monitors, one located in a central urban area in the midst of the downtown, University of Kentucky campus (Limestone), and the other located on an arterial roadway north of downtown (Newtown Pike).

The Newtown Pike monitor shows attainment with the standard, having an average of $14.9 \mu\text{g}/\text{m}^3$ over the time period 2001-2003, and having an average of $13.6 \mu\text{g}/\text{m}^3$ through April 2004.

The latest average through April 2004 for the Limestone monitor is $14.7 \mu\text{g}/\text{m}^3$. The violation at this monitor with an average of $15.6 \mu\text{g}/\text{m}^3$ exists during the 2001-2003 time period.

Even though Clark County does not have a monitor, the $\text{PM}_{2.5}$ levels have decreased by 15% at the Newtown Pike monitor, 12% at the Limestone monitor, and 13% at the Madison County monitor (See Figure 7 below).

Figure 6

Fayette Area PM2.5 Trend Utilizing Most Current Available Data

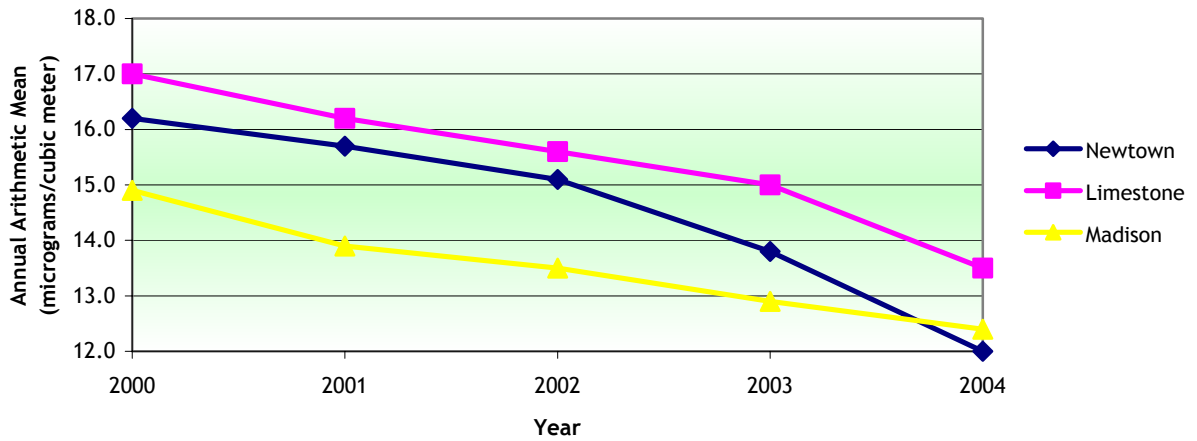
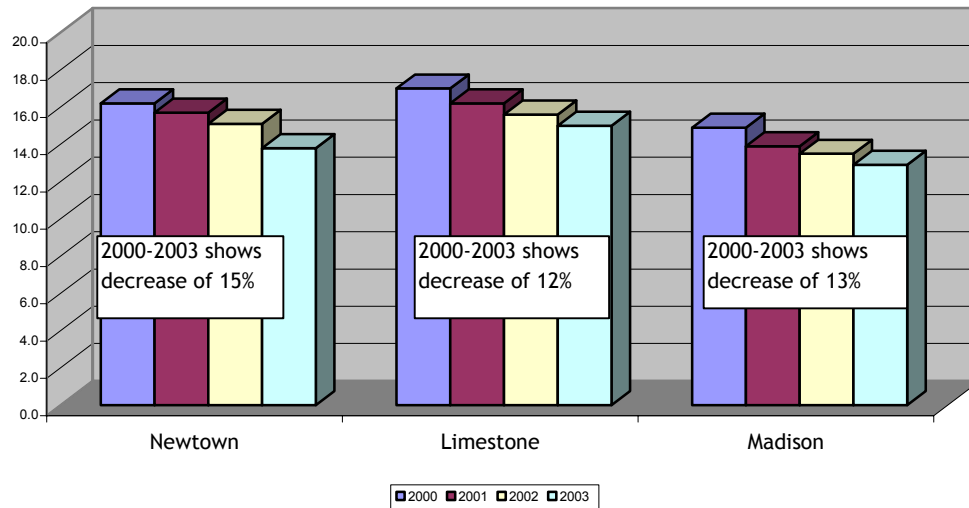


Figure 7

Decline in PM Values for the Fayette Area



Localized vs Regional Impacts

It is Kentucky's position that the monitor located on the UK Campus exhibits an "Urban Core Phenomenon." That is, the monitor's location is at the center of a large public university situated in a downtown metropolitan area with significant activity having a direct relationship to the PM_{2.5} levels being monitored.

This monitor is bracketed by numerous large and small boilers on the University of Kentucky campus and is located adjacent to continuing construction on the campus. Significant local impacts are occurring due to not only the close proximity of the boilers, but also from the emission contributions of construction equipment in the area. This monitor is located only 1.9 miles from the monitor showing attainment of the standard on Newtown Pike.

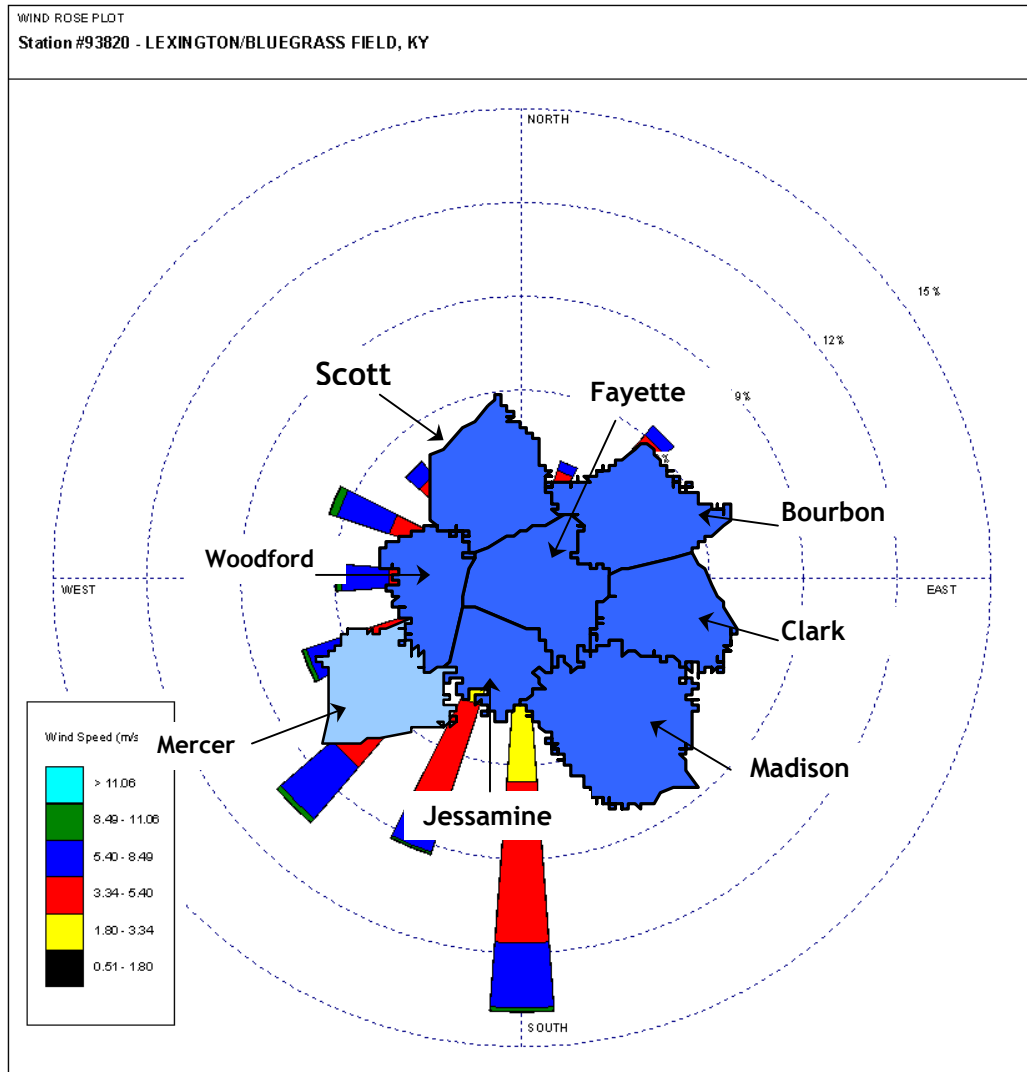
If significant regional impacts from emissions from Clark County were occurring, they would be expected throughout the regional monitoring network and not at one specific monitor in downtown Lexington.

Meteorology

EPA's response to Kentucky stated that the wind speed/wind direction data provided by Kentucky in the February submittal did not play a significant role in the decision making process and that the information was for summertime winds. Kentucky offers the following information.

As shown in the updated wind rose in Figure 8 below, the majority of the time the wind in the Lexington area comes from the south and the southwest. Clark County is east-southeast from the violating monitor in Fayette County. The wind rose data indicates that Clark County does not impact this monitor.

Figure 8



Additional Regional/National Controls

The implementation of new federal rules to decrease the amount of sulfur in both gasoline and diesel fuel will significantly decrease the amount of SO₂ in the entire area. Because of the Low Sulfur Diesel Rule, in 2007, new clean engines operating on 15-ppm sulfur diesel fuel will reduce NO_x emissions by 50%, and reduce PM emissions by more than 90%. Due to the Tier 2 Vehicle and Gasoline Sulfur program, by 2006 average national gasoline sulfur levels will be 90% lower.

Upon implementation of the Clean Air Interstate Rule (CAIR) SO₂ emissions from power plants will be reduced nationwide by 3.6 million tons in 2010 (approximately 40 percent below current levels) and by another 2 million tons per year when the rules are fully implemented (approximately 70 percent below current levels). NO_x emissions would be cut by 1.5 million tons nationwide in 2010 and 1.8 million tons annually in 2015 (about 65 percent below today's levels).

The first phase of compliance under the CAIR rule to reduce both SO₂ and NO_x emissions would be required by 2010, allowing substantial emission reductions in the area, by the proposed attainment date for PM_{2.5} nonattainment areas.

Conclusions

Based on the factors discussed above, Kentucky believes that Clark County should be designated attainment for the PM_{2.5} standard.

- Kentucky believes that EPA's use of the weighted emissions scoring approach was skewed. EPA did not include adjacent county emissions in the total emissions being analyzed for the area. If the emissions from the entire area under review were used, vs just those within the MSA, a very different result in the weighted emissions scores would have occurred. Clark County would not have the potential to contribute significantly to PM_{2.5} levels within the region.
- The only monitor showing a violation throughout the entire eight county region is being impacted by extreme urban core activities in a specific geographic location with Fayette County.
- PM_{2.5} levels continue to decline throughout the entire region. From a review of all monitors in the region, an average 13% decline in PM_{2.5} levels has occurred from 2000 through 2003. Every monitor in the region

is currently showing values well within attainment of the annual $PM_{2.5}$ standard using 2002 through 2004 data.

- Additional emission reductions on a national and regional level will provide substantial additional emission reductions in the region. The anticipated sulfur reductions due to the Low Sulfur Diesel Rule, the Tier 2 Vehicle and Gasoline Low Sulfur programs, and the Clean Air Interstate Rule (CAIR) will further lower pollutant levels within this region.

To have this county designated nonattainment would invoke additional, substantial, unnecessary requirements on local government planning agencies. Drastic emission reductions are scheduled to occur in the mobile sector throughout the next several years that will greatly impact pollutant levels in the area. In addition, reductions anticipated by the CAIR provisions, the air monitoring data demonstrating attainment of the $PM_{2.5}$ Standard at two of the three monitors in the area, the downward trend in monitored values, and Kentucky's position that the monitored violation of the standard in the downtown area is the result of a localized "urban core phenomenon;" lead to the conclusion that Clark County, Kentucky should be designated attainment for the $PM_{2.5}$ Standard.